

sider keeping the water level lower (or keep “offline” completely) until plants are established - new plants may be washed away in a heavy rain.

Plants must be able to withstand fluctuating water levels, tolerating drought as well as brief periods of standing water (ponding). Some areas will stay wet longer than others. Before planting observe a few rains and see where water ponds - plant moisture-loving varieties there. Plants that are less tolerant of moisture can be used around the edges of the rain garden where it receives less water and dries out first.

Consider using native plants - they are adapted to local conditions, support wildlife, and require less maintenance. Many native plants are well adapted to the cycle of soggy springs and dry summers. The deep roots of many prairie plants create channels in the soil that help loosen soil and drain water.

Plant in clumps of at least three of the same variety for a more pleasing appearance and easier maintenance. Try to have several varieties in bloom at all times for color and to benefit pollinators. Use larger plants in back or center. Consider shrubs as well as perennials, especially in larger gardens.

We’ve included just a few examples - always research your plants to see what conditions they prefer as well as bloom time and color.

### Rain Garden Maintenance

- Water during extended dry periods.
- Control weeds, especially when plants are becoming established.
- Don’t fertilize (especially native plants).
- Inspect for erosion or sediment buildup. Repair eroded areas and remove any accumulated sediment.
- Remove plant debris in spring. Cut plants back to 6-8 inches.
- Remove or replace any plants that don’t do well or that spread aggressively.
- Deadhead flowers for repeat bloom until August, then leave seedheads for birds.
- Avoid compacting soil.

Rain gardens have few problems if properly designed and constructed. One rain garden may not make that much difference, but if enough people do it, it does help.

### Other Native Plants to Use in the Rain Garden - Use Along Edges

Common Name	Scientific Name	Height	Bloom Time	Color	Comments
Blazing Star	<i>Liatris spp.</i>	2-4'	July-September	Blue, White	Blooms from top down
Butterfly Weed	<i>Asclepias tuberosa</i>	1-3'	June-August	Orange	Host plant for monarch butterfly, hard to transplant
Culver’s Root	<i>Veronicastrum virginicum</i>	3-5'	June-August	White	Attracts butterflies and pollinators
Great Blue Lobelia	<i>Lobelia siphilitica</i>	2-4'	August-Sept	Blue	Tolerates deer, shade
Mountain Mint	<i>Pycnanthemum virginianum</i>	2-4'	July-September	White	Fragrant leaves, attracts pollinators
Prairie Dropseed	<i>Sporobolus heterolepis</i>	2-3'	August-October	Pinkish-brown	Grass, good fall color
Purple Coneflower	<i>Echinacea purpurea</i>	2-4'	June-August	Purple	Attracts birds & butterflies
Spiderwort	<i>Tradescantia spp.</i>	2-3'	May-July	Blue violet	May die back in midsummer
Wild Bergamot	<i>Monarda fistulosa</i>	2-4'	July-August	Lavender	Attracts pollinators, fragrant

For more information on gardening please visit:  
<http://web.extension.illinois.edu/state/horticulture/index.php>

or  
 call University of Illinois Extension  
 Knox County Office  
 309-342-5108

Other information brochures can be find online at <http://web.extension.illinois.edu/hkmw/>

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**UNIVERSITY OF ILLINOIS EXTENSION  
 HENDERSON, KNOX, MCDONOUGH  
 AND WARREN COUNTIES**

Knox County Office  
 180 S. Soangetaha Rd. Suite 108  
 Galesburg, IL 61401

Phone: 309-342-5108  
 Fax: 309-342-1768  
 Email: [uiemg-knox@illinois.edu](mailto:uiemg-knox@illinois.edu)

# Rain Gardens



## Garden Tips

from  
 Knox County  
 Master Gardeners



We often don't think about where rainfall goes unless it ends up in the road on the way home or in the basement. Historically, before the landscape was altered, there was some runoff after heavy rains but most of the water soaked into the ground. From there it returned to the atmosphere through plants, recharged underground aquifers, or gradually reached streams and lakes through infiltration. Today, with much of the landscape covered with buildings and paved areas, water often runs directly into storm sewers and bodies of water, carrying pollution and causing erosion and flooding. Even lawns and agricultural areas don't absorb as much as the native vegetation did. One way to help reduce some of this runoff is by installing a rain garden.

### What is a Rain Garden?

A rain garden is a shallow man-made depression filled with plants (preferably native) that collects runoff from hard surfaces and holds it until it can be absorbed into the ground. It is not a bog or a wetland - water should be quickly absorbed, with the garden remaining dry most of the time. You may also hear the term bioswale - this is a vegetated channel designed to direct water from one location to another.

Rain gardens slow water runoff, reducing erosion and flooding, and lessen the impact on municipal storm sewers. The vegetation and soil filter out pollutants such as petroleum products, pesticides, herbicides, and fertilizer.

Rain gardens can be an attractive addition to the landscape and provide habitat for birds, pollinators and other wildlife.

Some people are reluctant to install a rain garden because they are afraid it will breed mosquitoes, but a properly located and constructed rain garden should drain in 24 hours. Mosquitoes need 7-14 days of standing water to complete their life cycle.

### Where to Put a Rain Garden

Walk around outside during a moderate to heavy rain and observe the patterns of water flow. Where does the water come from and where does it go? Ideally the rain garden should be located somewhere in this path.

Locate the rain garden on flat to gently sloping ground (some slope is required to direct the water to the garden). Full sun is preferable - sun aids evaporation of water and many rain garden plants need full or part sun.

The area must have good drainage. A simple test is to dig a hole 1' deep and 4-6" wide and fill it with water. If it drains within 12-24 hours the location is acceptable.

And finally, put it where you can enjoy it!

### Where Not to Put a Rain Garden

- Within 10 feet of a house or other building.
- Within 25 feet of a septic tank or close to a drinking water well.
- Where standing water collects (poor infiltration).
- Where there is compacted soil or where the water table is less than 4 feet below the surface.
- On a steep slope (greater than 10-12 degrees) - digging may destabilize the slope.
- Where digging will damage tree roots.
- Where overflow will be directed to neighboring properties or roads.
- Where soil from erosion sites will enter the rain garden (stabilize erosion first).
- Over underground utilities.

### How Big Should the Rain Garden Be

Size will depend on the volume of runoff (area being drained), the depth of the rain garden, and the type of soil (sand and silt generally drain faster than clay). You can find complicated charts and calculations online, but a quick rule of thumb is to make it 1/3 the size of the area it will drain. Even if you can't make it big enough anything is better than nothing. You might also consider multiple smaller rain gardens.

Rain gardens are designed to drain within 12-24 hours (and no more than 72 hours) after a rainfall of 1 1/4". Heavier rains will result in overflow - just be sure to direct the overflow where it will not cause damage.

### Constructing the Rain Garden

Small rain gardens can be inexpensively constructed by a homeowner. Call JULIE to locate underground utilities before digging. Many areas don't require a permit but there may be regulations so it's best to check first with municipalities or homeowners' associations.

Dig garden 4-8" deep (no more than 12"). Keep the bottom as level as possible with sloping sides (like a pie plate). You may want to loosen or amend the soil at the bottom.

The rain garden can be any shape. You can direct inflow and outflow to a specific point or allow water to spread out and flow all along the upper or lower edges. Concentrating the water flow will lead to more erosion.

Orient the rain garden so the long side stretches across the path of incoming water. Use a splash guard to disperse water from a downspout. You can direct water to a single inlet using buried

pipes or a grassy depression (swale). Lining the inlet with stones will help reduce erosion. Consider a small retention basin before the inlet to collect sediment if that is a problem.

Construct a berm on the low end to catch water if the garden is located on a slope. Use excavated soil and cover with grass or a dense groundcover. Make a low spot in the berm to direct overflow and reinforce this area with stones.

More detailed instructions are available online and in various publications.

### Rain Garden Plants

Plant as you would any garden bed, being careful not to compact soil. Use plants rather than seeds - seeds may be washed away and plants will establish more quickly. Cover with 1-2" mulch (use a kind that doesn't float) and keep well-watered until plants are established. Con-

### Native Plants That Tolerate Wet Conditions - Use in Center of Rain Garden

Common Name	Scientific Name	Height	Bloom Time	Bloom Color	Comments
Blue Flag Iris	<i>Iris versicolor</i>	2'	May-June	Blue	Rhizomes poisonous
Blue Vervain	<i>Verbena hastata</i>	2-5'	July-September	Blue	Attracts butterflies
Buttonbush	<i>Cephalanthus occidentalis</i>	4-12'	June-August	White	Shrub, fragrant, attracts butterflies
Cardinal Flower	<i>Lobelia cardinalis</i>	2-4'	July-September	Red	Needs consistent moisture
Chokeberry	<i>Aronia melanocarpa</i>	3-6'	May	White	Shrub, good fall color
Ironweed	<i>Vernonia spp.</i>	3-6'	July-September	Purple	Attracts pollinators
Joe Pye Weed	<i>Eutrochium spp.</i>	3-6'	July-September	Pink-Purple	Attracts butterflies
New England Aster	<i>Symphyotrichum novae-angliae</i>	3-5'	August-October	Purple	Cut back before July 1 for more compact shape
Red Osier Dogwood	<i>Cornus sericea</i>	3-9'	May-June	White	Shrub, winter interest
Sneezeweed	<i>Helenium autumnale</i>	2-4'	August-October	Yellow	Attracts butterflies
Swamp Milkweed	<i>Asclepias incarnata</i>	2-4'	July-August	Pink	Host plant for monarch butterflies
Turtlehead	<i>Chelone spp.</i>	2-4'	July-September	White, Pink	Deer resistant
Winterberry	<i>Ilex verticillata</i>	4-12'	June-July	White	Shrub, red berries